

(3 Hours)



[Total Marks: 80]

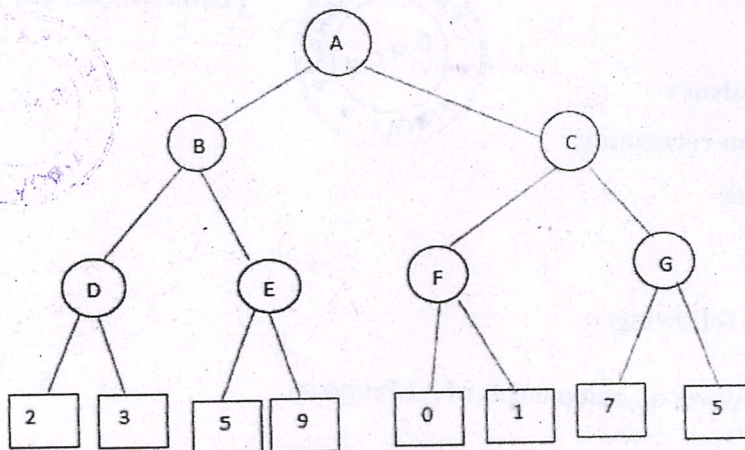
- Note: i) Question no. 1 is compulsory  
 ii) Attempt any three from remaining  
 iii) Assume necessary data

- 1 Solve any four of the following:
- (a) Define term AI. List down all components of AI Program. 5
  - (b) Explain Hill Climbing algorithm with an example. 5
  - (c) Give PEAS descriptors for Vacuum cleaner 5
  - (d) Convert following into predicate form. 5
    - 1. All vehicles have wheels.
    - 2. Some -one speaks some language in class.
    - 3. Everybody loves somebody sometimes
    - 4. All software engineer develops software.
    - 5. Virat is software engineer
  - (e) Explain utility based agent architecture with diagram. 5
- 2
- (a) Describe different types of environments of AI agents 10
  - (b) Explain A\* search algorithm with suitable example. 10
- 3
- (a) Explain different Language models of Natural Language Processing 10
  - (b) What do you understand by  $\alpha$  -  $\beta$  pruning? Apply alpha beta pruning on following graph 10

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Prag code  
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- 4 (a) The law says that it is a crime for an American to sell weapons to hostile nations. The country Nono, an enemy of America, has some missiles, and all of its missiles were sold to it by Colonel West, who is American. Prove that Col. West is a criminal! 10
- (b) Explain Partial-order planning with suitable example. 10
- 5 (a) Enumerate Classical "Water jug Problem". Describe the state space for this problem and also give the solution. 10
- (b) What is planning in AI? Discuss some of the major approaches used in planning 10
- 6 Write short notes on any Two of following:
- (a) Reinforcement Learning 10
- (b) Wumpus world Environment 10
- (c) Genetic Algorithms, 10

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